SLEEP, SLEEP DISORDERS, AND BIOLOGICAL RHYTHMS		
Kansas Science Standards: Grades 8 – 12		
Lesson	**Standard**	**Indicator**
1, 2, 3, 4	**1.1.1**	Actively engages in asking and evaluating research questions.
Pre-lesson, 1, 2, 3, 4	**1.1.2**	Actively engages in investigations, including developing questions, gathering and analyzing data, and designing and conducting research
Pre-lesson, 1, 2, 3	**1.1.3**	Actively engages in using technological tools and mathematics in their own scientific investigations. a. using a variety of technologies, such as hand tools, measuring instruments, calculators, and computers as an integral component of scientific investigations. b. using common mathematical functions to analyze and describe data. c. uses statistical and graphing data analysis techniques. d. recognizes that the accuracy and precision of the data, and therefore the quality of the investigation, depends on the instruments used. e. using equipment properly and safely.
1, 2, 3, 4	**1.1.4**	Actively engages in conducting an inquiry, formulating and revising his or her scientific explanations and models (physical, conceptual, or mathematical) using logic and evidence, and recognizing that potential alternative explanations and models should be considered. a. engages in discussions that result in the revision of his/her explanation. b. analyzes their explanation by reviewing current scientific understanding, weighing the evidence, and examining the logic so as to decide which explanations and models have the greatest explanatory power. c. evaluates personal preconceptions and biases with respect to his/her conclusions. d. based on their results, students consider modifications to their investigations.
1, 2, 3, 4	**1.1.5**	Actively engages in communicating and defending the design, results, and conclusion of his/her investigation. a. writes procedures, expresses concepts, reviews information, summarizes data, and uses language appropriately. b. develops diagrams and charts to summarize and analyze data. c. presents information clearly and logically, both orally and in writing. d. constructs reasoned arguments. e. responds appropriately to critical comments.
3	**3.3.2**	Understands populations of organisms adapt to environmental challenges and changes as a result of natural selection, genetic drift, and various mechanisms of genetic change.
1, 2, 3	**3.6.1**	Understands animals have behavioral responses to internal changes and to external stimuli. a. Responses to external stimuli can result from interactions with the organism's own species and others, as well as environmental changes. b. These responses can be innate and/or learned. c. Animals often live in unpredictable environments, and so their behavior must be flexible enough to deal with

		uncertainty and change.
1, 2, 3	**3.6.2**	Understands most multicellular animals have nervous systems that underlie behavior. a. Nervous systems are formed from specialized cells that conduct signals rapidly through the long cell extensions that make up nerves. b. The nerve cells communicate with each other by secreting specific excitatory and inhibitory molecules. c. Sense organs, specialized cells that detect light, sound, touch and specific chemicals, enable animals to monitor what is going on in the world around them.
1, 2, 3	**3.7.2**	Understands that homeostasis is the dynamic regulation and balance of an organism's internal environment to maintain conditions suitable for survival.
2, 3	**3.7.4**	Understands that in complex organisms there is a division of labor into specific body systems i.e., respiration, digestion, nervous, endocrine, excretion, circulatory, reproductive, immune, skeletal and muscle. a. These systems interact with one another to maintain homeostasis. b. Relate the organs and their functions to the body system.
2	**5.1.1**	Understands technology is the application of scientific knowledge for functional purposes. a. Technology is driven by the need to meet human needs and solve human problems. b. Engineering is the practical application of science to commerce or industry. c. Medicine is a practical application of science to human health. d. All technological advances contain a potential for both gains and risks for society.
1, 2, 3, 4	**5.1.2**	Understands creativity, imagination, and a broad scientific knowledge base are required to produce useful results.
4	**6.1.2**	Understands the severity of disease symptoms is dependent on many factors, a. These factors include age, genetic predisposition, nutrition, and environmental factors. b. Many diseases can be prevented, controlled, or cured. Some diseases are communicable and some are not.
4	**6.1.3**	Understands informed personal choices concerning fitness and health involve an understanding of chemistry and biology.
5	**6.4.2**	Understands there is a need to assess potential risk and danger from natural and human-induced hazards. a. Human-initiated changes in the environment bring benefits as well as risks to society. Various changes have costs and benefits. For example, vaccinations are a benefit for our society but can have risks for individuals.
5	**6.5.1**	Understands progress in science and technology can be affected by social issues and challenges. Science and technology indicate what can happen, not what should happen. a. Increased use of antibiotics may also increase human resistance to antibiotics.
1, 2, 3	**7.1.4**	Recognizes that society helps create the ways of thinking (mindsets) required for scientific advances, both toward training scientists and educating a populace to utilize benefits of science (e.g., standards of hygiene, attitudes toward forces of nature, etc.).
1, 2, 3, 4	**7.2.2**	Understands scientific knowledge begins with empirical observations, which are the data (also called facts or evidence) upon which further scientific knowledge is built.
3	**7.3.1**	Demonstrates an understanding of the history of science. a. Modern science has been a successful enterprise that contributes to dramatic improvements in the human condition.

		b. Science progresses by incremental advances of scientists or teams of scientists. c. Some advances that are fundamental and long-lasting include: Copernican revolution, Newtonian physics, relativity, geological time scale, plate tectonics, atomic theory, nuclear physics, biological evolution, germ theory, industrial revolution, molecular biology, quantum theory, and medical and health technology.
Kansas Mathematics Standards: Grades 9 & 10		
Lesson	**Standard**	**Knowledge Base Indicator**
Pre-lesson, 1, 3	**1.1.1**	Knows, explains, and uses equivalent representations for real numbers and algebraic expressions including integers, fractions, decimals, percents, ratios; rational number bases with integer exponents; rational numbers written in scientific notation; absolute value; time; and money.
Pre-lesson, 1, 3	**1.3.1**	Estimates real number quantities using various computational methods including mental math, paper and pencil, concrete objects, and/or appropriate technology.
Pre-lesson, 1, 3	**1.4.1**	Computes with efficiency and accuracy using various computational methods including mental math, paper and pencil, concrete objects, and appropriate technology.
1, 3	**2.1.1**	Identifies, states, and continues the following patterns using various formats including numeric (list or table), algebraic (symbolic notation), visual (picture, table, or graph), verbal (oral description), kinesthetic (action), and written.
1, 3	**2.3.9**	Describes the difference between independent and dependent variables and identifies independent and dependent variables.
1, 3	**2.4.1**	Knows, explains, and uses mathematical models to represent and explain mathematical concepts, procedures, and relationships.
Pre-lesson, 1, 2, 3	**4.2.1**	Organizes, displays, and reads quantitative (numerical) and qualitative (non-numerical) data in a clear, organized, and accurate manner including a title, labels, categories, and rational number intervals using these data displays.
Kansas Reading Standards: Grades 9 – 12		
Lesson	**Standard**	**Knowledge Base Indicator**
All lessons	**1.3.1**	Determines meaning of words or phrases using context clues (e.g., definitions, *restatements*, *examples, descriptions, comparison-contrast*, clue words, *cause-effect*) from sentences or paragraphs.
All lessons	**1.4.2**	Understands the purpose of text features (e.g., title, graphs/charts and maps, table of contents, pictures/illustrations, boldface type, italics, glossary, index, headings, subheadings, topic and summary sentences, captions, sidebars, underlining, numbered or bulleted lists, footnotes, annotations) and uses such features to locate information in and to gain meaning from appropriate-level texts.
All lessons	**1.4.4**	Generates and responds logically to literal, inferential, evaluative, synthesizing, and *critical thinking* questions before, during, and after reading the text.
All lessons	**1.4.5**	Uses information from the text to make inferences and draw conclusions.
All lessons	**1.4.8**	Explains and analyzes *cause-effect* relationships in appropriate-level *narrative*, *expository*, *technical*, and *persuasive texts*.

All lessons	**1.4.9**	Uses *paraphrasing* and organizational skills to *summarize* information (stated and implied *main ideas*, main events, important details, underlying meaning) from appropriate-level *narrative*, *expository*, *technical*, and *persuasive texts* in logical or sequential order, clearly preserving the author's intent.
All lessons	**1.4.10**	Identifies the *topic*, *main idea(s)*, supporting details, and *theme(s)* in text across the content areas and from a variety of sources in appropriate-level texts.
1, 2, 3	**1.4.13**	Follows directions presented in *technical text.*
Kansas Writing Standards: Grades 9 – 12		
Lesson	**Standard**	**Knowledge Base Indicator**
All lessons	**1.2.2**	Clearly defines the main idea by selecting relevant, logical details that meet the reader's informational needs.
All lessons	**1.2.3**	Selects and uses (1) personal experience (2) personal observations (3) prior knowledge (4) research to meet the reader's needs and to create appropriate point of view.
All lessons	**1.2.4**	Expresses information in own words using appropriate organization, grammar, word choice, and tone sufficient to the audience.
All lessons	**1.2.9**	Writes a cohesive piece that includes (1) an introduction that draws the reader in (2) a body that provides information through the logical placement of facts and data (3) a conclusion that reinforces the thesis statement and leaves the reader with a sense of completion.
All lessons	**1.2.14**	Manages specialized vocabulary particular to the subject/topic to provide ease of understanding.
All lessons	**1.2.19**	Uses correct mechanics and punctuates to guide the reader through the text.
All lessons	**1.2.21**	Spells familiar and most unfamiliar words correctly and uses available resources (e.g. dictionary, spell check).
All lessons	**1.3.10**	Writes with an awareness of purpose and audience (e.g. letters, complex reports, directions, graphics, brochures, electronic presentation, newsletters, memos, job searches, fliers, e-mails, Web pages, pictorials).
All lessons	**1.3.13**	Selects words that consider appropriate connotation for the intended task/format (e.g. persuasive, if persuading; informational, if informing, etc.).
All lessons	**1.3.14**	Writes compact sentences or phrases that make the point clear.
5	**1.4.1**	Asserts an arguable proposition or opinion (thesis statement).
5	**1.4.2**	Selects and uses (1) personal experience (2) observations (3) prior knowledge (4) research important for the reader to reach a conclusion and use an appropriate point of view for the piece (e.g. first person in editorial).
5	**1.4.3**	Develops and differentiates details necessary to expand the main topic in a balanced format to support the writer's position.
5	**1.4.5**	Builds a focused argument that uses logical thinking and appeals to reason, authority, and/or emotion.
5	**1.4.12**	Uses language that is appropriate for persuasive writing and easy for the audience to understand.
1, 2, 3, 4	**2.1.1**	Generates relevant, investigating, and researchable questions in order to create a *thesis*/*hypothesis*. Uses knowledge, comprehension, application, analysis, synthesis, and evaluation levels of questioning.
1, 2, 3, 4	**2.1.2**	Locates appropriate print and non-print information using text and technical resources, periodicals, and book indices,

		including databases and Internet.
1, 2, 3, 4	**2.1.6**	Analyzes, organizes, and converts information into different forms (e.g., charts, graphs, drawings).
Kansas Health Education Standards: Grades 9 – 12		
Lesson	**Standard**	**Descriptor**
3, 4, 5	**1.1**	Analyze how behavior can impact health maintenance and disease prevention.
5	**1.2**	Describe the interrelationships of mental, emotional, social, and physical health throughout adulthood.
4, 5	**1.3**	Analyze how their family, peers, and community influence the health individuals.
5	**1.4**	Describe how to delay the onset of and reduce risk for potential health problems across their lifespan.
5	**1.5**	Analyze how public health policies and government regulations influence health promotion and disease.
3, 4, 5	**1.6**	Demonstrate the ability to evaluate health information, products, and services for validity, reliability, and effectiveness as they relate to personal health.
4	**2.1**	Analyze situations requiring professional health services.
4, 5	**2.2**	Analyze the short-term and long-term consequences of safe, risky, and harmful behaviors and recognize their responsibility for self-management.
4, 5	**5.1**	Demonstrate skills for communicating effectively with family, peers, and others.
4, 5	**6.1**	Demonstrate the ability to utilize various strategies when making decisions related to health needs and risks of young adults.
4, 5	**7.1**	Evaluate and express the effectiveness of communicating accurate health information and ideas.
5	**7.2**	Demonstrate ability to work cooperatively when advocating for health.